

# Notice of Allowability

Application No.

10/524,827

Examiner

Russell Kallis

Applicant(s)

SAUER ET AL.

Art Unit

1638

## -- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to amendment filed 1/10/2007.
2. ☒ The allowed claim(s) is/are claims 1,9,12-15,22-25,30,35-38,47-55.
3. ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
  - a) ☒ All b) ☐ Some\* c) ☐ None of the:
    1. ☐ Certified copies of the priority documents have been received.
    2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
    3. ☒ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

\* Certified copies not received: \_\_\_\_\_.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.  
**THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.**

4. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
  5. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
    - (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
      - 1) ☐ hereto or 2) ☐ to Paper No./Mail Date \_\_\_\_\_.
    - (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date \_\_\_\_\_.
- Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
6. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

### Attachment(s)

1. ☐ Notice of References Cited (PTO-892)
2. ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3. ☐ Information Disclosure Statements (PTO/SB/08),  
Paper No./Mail Date \_\_\_\_\_
4. ☐ Examiner's Comment Regarding Requirement for Deposit  
of Biological Material
5. ☐ Notice of Informal Patent Application
6. ☒ Interview Summary (PTO-413),  
Paper No./Mail Date 3/28/2007.
7. ☒ Examiner's Amendment/Comment
8. ☐ Examiner's Statement of Reasons for Allowance
9. ☐ Other \_\_\_\_\_.

### EXAMINER'S AMENDMENT

An examiner's amendment to the record appears below. Should the changes and/or additions be unacceptable to applicant, an amendment may be filed as provided by 37 CFR 1.312. To ensure consideration of such an amendment, it MUST be submitted no later than the payment of the issue fee.

Authorization for this examiner's amendment was given in a telephone interview with Roberte Makowski on 3/28/2007.

The application has been amended as follows:

In the claims:

Cancel claims 2-8, 10-11, 16-21, 26-29, 31-34 and 39-46.

1. (Currently amended) A process for preparing ketocarotenoids by cultivating a genetically [modified organisms] transformed plant which, compared with [the] an untransformed wild type plant, [have a modified] has an introduced or increased ketolase activity[, and the modified ketolase activity is] caused by transformation with a polynucleotide encoding a ketolase comprising the amino acid sequence SEQ ID NO: 2 or a sequence which is derived from this sequence by substitution, insertion or deletion of amino acids and which has an identity of at least 95% at the amino acid level with the sequence SEQ ID NO: 2; wherein said transformed plant produces ketocarotenoids and the ketocarotenoids are harvested.

Art Unit: 1638

9. (Currently amended) The process as claimed in claim 1, wherein the [organisms] plant is additionally transformed with a polynucleotide encoding a polypeptide [have an] that introduces or [increased] increases the activity, compared with the untransformed wild type plant, of at least one of the activities selected from the group of hydroxylase activity and  $\beta$ -cyclase activity.

12. (Currently amended) The process as claimed in claim [11] 9, wherein the polynucleotide [nucleic acids] which [encode] encodes a hydroxylase [comprising] comprises the amino acid sequence of SEQ ID NO: 16 or a sequence which is derived from this sequence by substitution, insertion or deletion of amino acids and which has an identity of at least 95% at the amino acid level with the sequence SEQ ID NO: 16 [are introduced as nucleic acid encoding a hydroxylase].

13. (Currently amended) The process as claimed in claim 12, wherein the polynucleotide [nucleic acids comprising] comprises the sequence of SEQ ID NO: 15 [are introduced].

In claim 14, line 1, delete "11" and insert --9--.

15. (Currently amended) The process as claimed in claim 14, wherein the polynucleotide [nucleic acids comprising] comprises the sequence of SEQ ID NO: 17 [are introduced].

In claim 22, line 1, delete "21" and insert --1--.

Art Unit: 1638

25. (Currently amended) The [A] genetically [modified organism] transformed plant of claim 1 [where the genetic modification

(a) in the case where the wild-type organism already has a ketolase activity, increases the activity of a ketolase compared with the wild type and

(b) in the case where the wild-type organism has no ketolase activity, causes the activity of a ketolase compared with the wild type,

and the ketolase activity which has been increased as in (a) or caused as in (b) is caused by a ketolase comprising the amino acid sequence SEQ ID NO: 2 or a sequence which is derived from this sequence by substitution, insertion or deletion of amino acids and which has an identity of at least 95% at the amino acid level with the sequence SEQ ID NO: 2].

30. (Currently amended) The genetically [modified organism] transformed plant of claim 12 [as claimed in claim 25, wherein the genetic modification additionally increases at least one of the activities selected from the group of hydroxylase activity and  $\beta$ -cyclase activity, compared with the wild type].

In claim 35, line 1 delete “modified”, and insert --transformed--.

In claim 35, line 1 delete “32”, and insert --25 or 30--.

In claim 35, line 2 change “plants are” to --plant is--.

37. (Previously presented) The genetically [modified organisms] transformed plant as claimed in claim 25, where the [organism] plant is used as animal or human food.

Art Unit: 1638

38. (Previously presented) The genetically [modified organisms] transformed plant as claimed in claim 25, where the [organism] plant produces ketocarotenoid-containing extracts or animal and human food supplements.

In claim 49, line 1, delete “3” and insert --1--.

In claim 50, line 1, delete “4” and insert --1--.

53. (New) The genetically transformed plant of claim 14.

54. (New) The genetically transformed plant as claimed in claim 30, where the plant is used as animal or human food.

55. (New) The genetically transformed plant as claimed in claim 30, where the plant produces ketocarotenoid-containing extracts or animal and human food supplements.

Art Unit: 1638

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Russell Kallis whose telephone number is (571) 272-0798. The examiner can normally be reached on M-F 8:30-5.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Anne Marie Grunberg can be reached on (571) 272-0975. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Russell Kallis Ph.D.  
March 28, 2007

RUSSELL P. KALLIS, PH.D.  
PRIMARY EXAMINER

